An Empirical Study on International Student Satisfaction in Online Learning System in Thailand Universities

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ABSTRACT

In today's competitive world, knowledge is considered as the most vital component for organization including higher education institute's continuous success. Knowledge is acknowledged as the individual's wisdom, intellects and are only recognizable through their way of work, procedures, customs, norms and is hard to imitate by others. Knowledge sharing not only decreases manufacturing or service costs, it also leads to the organization's performance because knowledge sharing helps to eliminate errors and improves the ability to be innovative. Generally, knowledge workers are often reluctant to share their knowledge with others thinking that their power will be reduced in the organization. The purpose of this study is to provide a clear understanding of academic's knowledge sharing behavior in the higher education institutes. This study attempts to explore the motivational factors such of academics that contribute in knowledge sharing behavior in the educational institute. This study also considered extrinsic reward and employee commitment to understand the academics knowledge sharing behavior. Theory of reasoned action was used in this study to understand to human behavior in knowledge sharing. Public and private universities in Bangkok will be considered for data collection. Non-probability convenience sampling technique will be adopted to get the maximum participation among the academics. The result will provide a useful insight about how educational institute influence the academics' knowledge sharing attitudes, intention and behavior. The outcome of this research will lead to the development of well-informed and intelligent human resources in Thailand to improve the knowledge economy.

Keywords: Knowledge sharing behavior, TRA, Higher Education Institute,

INTRODUCTION

Background

Online learning is considered as a subset of all distance education, has always been about providing access to an educational experience that is more flexible in time and space than campus-based learning (Anderson, 2004, p. 53). As Croxton (2014) indicated, online learning attracts large numbers of students because it offers flexibility in participation, ease of access, and convenience as it is expected to continue to figure prominently in higher education. Grabinger and Dunlap (1995) believed that the online learning system establishes a growing

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demand for self- directed learning with greater possibilities for individualization and flexibility. According to the online learning statistics, 19.7 million students were enrolled in courses at degree-granting institutions in 2017, and 6.6 million of them signed up for some form of online learning system. The number of undergraduate students who completed at least one course online was 3.2 million (19.5%), and who study exclusively in distance education/online courses was 2.2 million (13.3%). Out of 1.4 million students earning bachelor's degrees, 274,211 (9.1%) students took at least one online course, and 868,708 (28.9%) students enrolled in entirely distance education/online courses (Bustamante, 2020). Research by Kim and Bonk (2006) stated that the number of students enrolled in online learning system is growing rapidly in colleges and universities around the world as higher education institutions have increasingly embraced online education. This indicates that there is a need for college and university students to offer online courses to enable students to feel their need for formal education or develop professional opportunities.

As stated by Lee & Mendlinger (2011), regardless of traditional face-to-face studies, the Internet and other information technology have been integrated into educational platforms to expand learning activities. They also explained that the educational institutions, including many quality colleges and universities deliver the content of online courses over the Internet. These higher education institutions make wireless Internet available to students, and information and communication technologies (ICT) are being used as a learning tool by providing downloadable teaching materials (PowerPoint, video, audio, etc.) from educational websites (Harris and Krousgrill, 2008). Therefore, teaching materials and information are constantly available to a wide range of students, regardless of time and place (Reynolds et al., 2008).

Farzana and Rahman (2019) stated that Thailand is one of the favorite destinations for foreigners to study, travel with its "open door policy" in Southeast Asia. Thailand has become the third largest destination in South Asia for international students after Malaysia and Singapore with a growing trend towards international students moving to Asian countries for higher education (Michael, 2018). Farzana and Rahman (2019) pointed out that there is a niche market in which to study with a growing number of international students. In 2012, according to a survey conducted by the Office of the Higher Education Commission, 20,309 international students from 130 countries studied in Thai higher education institutions. The number of international students increased by 0.74% compared to 2010. (Ngamkamollert and Ruangkanjanases, 2015) By region, the largest number of international students came from Asia, reaching 17,287, and the top three sending countries are China (8,444), Myanmar (1,481) and Laos (1,344), respectively (Yin, 2015). The total number of international students has increased annually from 11,021 students in 2007 to 20,309 students in 2011.

Student satisfaction is the discernment that the quality of information and knowledge, or the information and knowledge itself meet the expectations of the students (Shehzadi et al., 2020). As explained by Elliot & Shin (2002), the student satisfaction is "the favorableness of a students' subjective assessment of the various educational outcomes and experiences. Student satisfaction is consistently dependent on repeated experiences of campus life. " According to Ngamkamollert and Ruangkanjanases (2015), the higher education industry is growing vigorously and having intense competition, thus, in order to attract more potential international students to choose Thailand as their preferred study destination, the satisfaction of students will be the best and most effective way to promote. In this regard, in order to better understand the student satisfaction in online learning system, this study examines how perceived self-efficacy and learner interaction influence the international student satisfaction

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while studying in Thailand. The main purpose of this paper is to identify the issues and the possible relationships between the varieties mentioned above. The findings of this study will help the higher educational institutions, especially to understand which areas exceed expectations and can be used to advance the institution, and which areas are otherwise falling behind and need improvements.

Objectives of the Study

Keeping focus on the student satisfaction of the international students during their study in Thailand, the study aims to attain the following objectives:

a. To identify factors that affects perceived ease of use, perceived usefulness and student engagement towards the satisfaction of students studying in Thailand.
b. To explore whether perceived self-efficacy and learner interaction influence on student satisfaction of international students during their study in Thailand.

LITERATURE REVIEW

Online Learning

According to Urdan and Weggen (2000), online learning is referred as web learning, e-learning, distributed learning, online learning, network learning, cyber learning, virtual learning, or network learning. The authors further mentioned, online learning is a subset of distance education and encompasses a wide range of technology applications and learning processes, including machine learning, web learning, virtual classrooms, and digital collaborations. As stated by Rosenberg (2001), online education is the delivery of course content to the end user via a computer using Internet technologies. Furthermore, the definition covers the delivery of course content through all electronic media, including the Internet, intranets, extranets, satellite broadcasts, audio / video tapes, interactive televisions and CD-ROMs, as online learning also takes the form of complete courses with access to just-in-time content (Keengwee & Kidd, 2010; Hall, 2000).

Some previous studies stated that online learning represents a major shift in how people learn and how learners are taught, and online learning should provide content, immersion, interactivity and effective communication (Sinclaire, 2011; Bell & Federman, 2013). On the report of Georgouli et al. (2008), online content should be complemented and improved through activities, such as blog, discussion board, etc. to facilitate self-learning. When it comes to faculty and students, online instructors must have a positive attitude towards technology, and students must have competent computer skills (Selim, 2005). Consequently, according to Georgouli et.al. (2008), students and teachers may lack the knowledge or skills required to use an online learning management system for the first time, as this is one of the biggest challenges of online learning.

Perceived Self-Efficacy

Bandura (1977, 1986, 1997), the psychologist who originally proposed the concept of self-efficacy, defined self-efficacy as an individual's belief in their capabilities to organize and perform actions necessary to achieve certain types of performances. Self-efficacy can be understood as a key mechanism that explains the interactive relationship between internal forces and external stimuli that influence human behavior because beliefs about self-efficacy

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determine level of motivation, which is reflected in the amount of effort made in the process and the length of time devoted to a challenging situation (Lee & Mendlinger, 2011; Bandura, 1988). Lee and Mendlinger (2011) appended, people with high self-efficacy tend to make sufficient efforts that can lead to successful results, while people with low self-efficacy are likely to prematurely stop their efforts in order to complete their task.

According to Hodges (2008, p. 10), research on self-efficacy began in the late 1970s and the early 1990s, even before online learning existed. Additionally, he proposed that research on self-efficacy is in its infancy in the online environment, and it is critical to understand self-efficacy to improve online learning, which can be a key component of academic success in distance education. To the same extent, self-efficacy in relation to online learning is a form of situation-specific efficacy, and refers to how people assess their capabilities to use online learning systems, including computers, the Internet, web-based teaching and learning tools (Lee & Mendlinger, 2011). As reported by Lee & Witta (2001), students who are trying to stay motivated and successful in an online course must be highly self-efficacious for the content taught. However, they carefully examined that to successfully complete online courses might not be enough to have adequate self-efficacy, because the extensive use of online technology is required by students to access course materials, send and receive emails, browse the Internet, and search for information.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was first introduced by Davis (1986), based on the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980) and the theory of planned behaviour (TPB) (Ajzen, 1985, 1991). Research done by Venkatesh and Davis (2000), this model is the most commonly used model in various studies to study the factors that influence individual's use of new technology. Davis (1989) suggests that to predict the use of new technology by users, the sequential relationship of belief-attitude-intention-behavior in TAM plays an important place. Based on the theory of reasoned action (TRA), Technology Acceptance Model (TAM) proposes users' acceptance of technology is driven by their perceptions of the consequences of that usage (Davis, 1989; Davis, Bagozzi, and Warshaw, 1989). According to Davis (1989), there are two main factors, perceived ease of use and perceived usefulness that influence user's acceptance behavior. Particularly, TAM predicts when users' perceptions of the ease of use and usefulness of the technology are positive, they will embrace new technologies (Lee & Mendlinger, 2011).

Perceived Ease of Use (PEOU)

Perceived ease of use (PEOU) is defined by Davis (1989) as, "the degree to which a person believes that using a particular system would be free from effort". He uses elements, such as ease of use, user expectation, user interaction, flexibility, increase performance, and easy to use to measure perceived ease of use. Agarwal, Sambamurthy, and Stair (2000) pointed out that the perceived ease of use of new systems was affected by the self-efficacy of technology. Therefore, when taking an online course, it is important to be familiar with the technology (Lee & Mendlinger, 2011).

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Perceived Usefulness (PU)

Many researchers defined the term perceived usefulness (PU) as "the degree to which a person believes that using a particular system would enhance his or her performance" (Davis 1989; Kim 2012; Sin et al. 2012). The perceived usefulness is described by Davis (2003), a person's level of confidence to a system that can improve its performance. To measure perceived usefulness, Alsabawy et.al. (2016) adopted Davis's concept and used elements of accomplish quickly, improving performance, increasing productivity, easier study, overall usefulness.

H1: Perceived self-efficacy will positively impact perceived ease of use of the international students in online learning.
H2: Perceived self-efficacy will have a positive influence on the international students' perceived usefulness in online learning.

Learner Interaction

Moore (1989) identified three types of interaction in online learning: learner-content, learner-instructor, and learner-learner interactions. He defined the learner-instructor interaction "is regarded as essential by many educators and highly desirable by many learners." The interactions among students themselves, the interactions between teachers and students, and the collaboration in learning that results from these interactions are keys to the learning process (Palloff et.al., 1999). As claimed by Chang & Smith (2008), new methods must be developed that give learners time to interact, because personal interactions between teachers and students, students and students, students and course content are directly related to student satisfaction with the course. Empirical studies have shown that increased interaction can lead to increased student satisfaction with the course and learning outcomes (Zhang et al. 1994; Zirkin et al. 1995).

Muirhead (2004) promotes several strategies for encouraging student interaction in online courses, including: encouraging critical thinking, providing relevant and engaging lessons, sharing biographical messages (both faculty and students), offering positive feedback on student work, including stories in discussions, and allowing flexibility in course or organization schedule. Moreover, to develop a learning environment that fosters personal interaction between students and teachers, students and students and students and students, it is imperative for online educators to develop a learning environment, because the main way of teaching students in an online learning environment is human interaction (Garrison & Cleveland-Innes, 2005). Porter (1997) mentioned that it is essential to have a qualified teacher who is capable and knowledgeable to develop effective materials that will enable learners to participate in interactive learning. According to Garrison et.al. (2000), students should have enough time to ponder discussion topics, especially when critical thinking is expected, so that they can develop their thoughts and communicate them at a deeper level.

Student Engagement

Engagement is defined by Hu & Kuh (2001) as "the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes". Student engagement has received considerable attention in the literature since the mid-1990s, its origins can be essentially seen ten years earlier, especially in the work of Alexander Astin on student engagement (Astin, 1984). According to Trowler (2010), student engagement has

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recently become a focus of attention for those seeking to improve learning and teaching in higher education institutions, setting the agenda for meetings and thematic conferences at neighboring campuses all around the world. Bomia et.al. (1997) described student engagement as "students' willingness, need, desire, and compulsion to participate in, and be successful in, the learning process". Martin and Bolliger (2018) has stated that there is an importance of student engagement in online learning. A high level of student engagement is necessary for and contribute to collegiate success (Kuh et.al., 2005).

According to Mandernach et.al. (2011), if students are motivated to successfully complete a course, engaged and invested in their desire to learn, and are willing to put in the effort expected by their teachers, they are more likely to be involved in their education. He also included that measuring student engagement allows teachers to adapt their teaching methods in response to changes in student motivation, engagement, and attitudes toward their course and educational activities. Research done by Yebei (2011), differences in groups of international students were studied during their co-curricular engagement, and measures of College Student Experiences Questionnaire were unidimensional, and upper-level international students had higher scores on co-curricular engagement than first-year international students, and first-year international students had higher level of satisfaction with their college experience than upper-level international students. Moreover, international students were as involved in campus activities as local students, but, international students lacked academic support compared to local students (Grayson, 2008).

H3: Learner interaction will have a positive impact on the engagement of students in online learning system.

Student Satisfaction

Satisfaction is a key component of what keeps people motivated and engaged and helps them achieve long-term goals; student satisfaction is also important to universities as it reflects both the level of student welfare and how well the institution is meeting its students' expectations (Global Student Satisfaction Awards, 2019). Astin (1993) defined student satisfaction as a student's perception of the college experience and the perceived value of education received during school attendance. He appended that satisfaction is an important 'intermediate outcome' (p. 278), because it affects student motivation (Chute, Thompson, and Hancock, 1999; Donohue & Wong, 1997). According to the several studies, student satisfaction is associated with several outcome variables such as persistence (Allen & Seaman, 2008), retention (Debourgh, 1999; Koseke & Koseke, 1991), course quality (Moore & Kearsley, 1996), and student success (Keller, 1983; Pike, 1993; Noel-Levitz, 2011).

Dziuban, Wang, and Cook (2004) found that if professors of students communicate effectively, facilitate or encourage students' learning, organize the course effectively, show interest in students' learning and academic performance, show respect for students, and assess students' work accurately, then students are more likely to appreciate courses and teachers with satisfactory level. Student satisfaction depends not only on teaching considerations, but in-depth analysis is needed to find out all the factors that influence student satisfaction (Songsathaphorn et.al., 2014). Songsathaphorn, Chen, and Ruangkanjanases (2014) stated that student satisfaction is not easy task to measure, thus, the critical factors or variables used to measure student satisfaction differ from one researcher to another.

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H4: Perceived ease of us will have a positive impact on the international students' satisfaction in online learning.
H5: Perceived usefulness will positively influence international student satisfaction in online learning.
H6: Student engagement will positively impact on the satisfaction of international students in online learning.

Proposed Conceptual Model

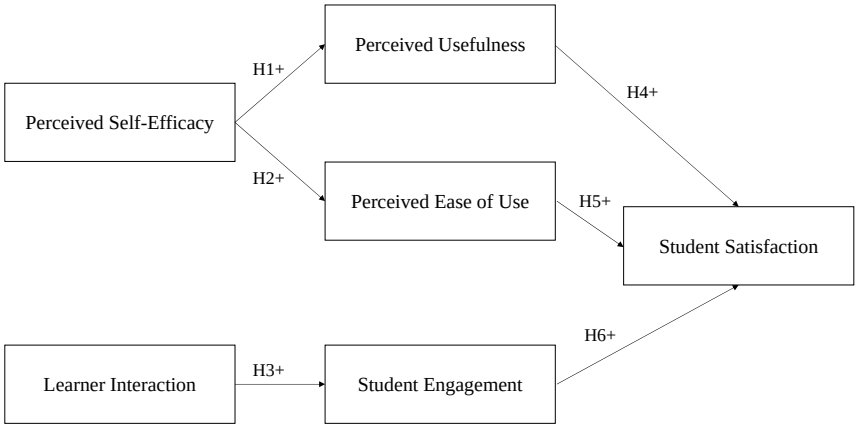

Figure 1: Proposed Conceptual framework

METHODOLOGY

Research Design

To investigate the factors that influence student satisfaction with online learning, an online survey was conducted to obtain quantitative data to be able to examine the recommended hypotheses. The survey questionnaire was sent anonymously to all international students who took online or hybrid courses at public and private universities in last one year. The questionnaire was based on existing literature and all questionnaire questions are included in the Appendix. The design of the survey instrument comprised of the following; independent variables i.e., perceived self-efficacy, perceived usefulness, perceived ease of use, learner interaction, student engagement; on the other hand, student satisfaction is the dependent variable, and demographic information like gender, nationality, educational background, job status, online learning platform. The data will be analyzed to draw conclusions and recommend ways for further improvement in student satisfaction with online learning. This study will examine the relationship between a dependent variable (student satisfaction) and the independent variables (perceived self-efficacy, perceived usefulness, perceived ease of use, learner interaction, student engagement).

Sample and Participants

To ensure the maximum participation, purposive non-probability snowball sampling method was adopted for this study. A total number of 65 international students participated in this survey, the female students (n=33) represented 50.8% of the participants, while the male students (n=32) represented 49.2% of the participants. Participants who took in the survey

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were from several countries, such as Afghanistan, Bangladesh, Brazil, Cambodia, China, Finland, Germany, India, Iran, Myanmar, Nigeria, South Africa, Turkmenistan, Turkey, Australia, Wakanda and the USA. For the sampling frame, international students, studying undergraduate, masters and doctoral degree in English were considered to provide their response. Most of the participants were undergraduate students (63.1%), and the second-year students (32.3%). The majority (75.4%) studied in the online learning, while (24.6%) did not have online courses. The greater number of the students (44.6%) had taken online courses four or more times. According to the data, laptop device (69.2%), Zoom Meetings platform (58.5%), Wi-Fi connection (72.3%) was consumed by most students for online study.

Scale Measurement

The scale for this survey were adopted from previous literature. This study used six survey question in order to measure the student satisfaction in online learning. Perceived self-efficacy was measured with four items, perceived ease of use was with 4 items, and perceived usefulness was with 5 items which was developed by Lee and Mendlinger (2011). These three variables included response options ranging from "least likely = 1" to "most likely = 5". These questions were borrowed from the TAM model and modified for the study of online learning. On the other hand, other three variables, learner interaction was measured with seven items, student engagement was with five items, and student satisfaction was with six items which was created by Gray and DiLoreto (2015b). These items were measured with 6point Likert-scale ranging from 1 (strongly disagree) to 6 (strongly agree). Demographic questionnaires covered gender, nationality, educational background, employment status of the international students.

Data Collection

An online questionnaire was used for the survey, and the survey was conducted in English, as the respondents selected for this study are enrolled in an international program through an international college at public and private universities in Thailand. Before participating in the survey, participants were asked if they use online learning system in Thailand or not. Cross-sectional data from the online survey using a Google form was used for this study from October to November in 2020. The link of the survey was shared via Line, WhatsApp, Instagram, Facebook, as well as face-to-face to gather the responses of participants. Participants' personal information, such as names, email addresses was not included for confidentiality purposes. Primary data was obtained from all international students who participated in the survey, and they were not provided with any financial incentives.

RESULTS

Demographic information

The respondents (n=65) who participated in the survey were from Afghanistan, Bangladesh, Brazil, Cambodia, China, Finland, Germany, India, Iran, Myanmar, Nigeria, South Africa, Turkmenistan, Turkey, Australia, Wakanda and the USA. Among the respondents, the female students (n=33) represented 50.8% of the participants, while the male students (n=32) represented 49.2% of the participants.

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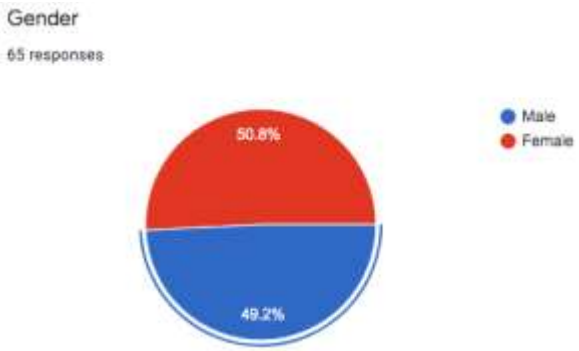
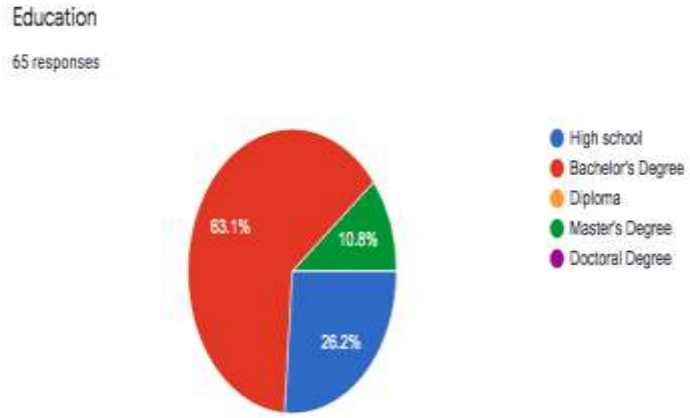
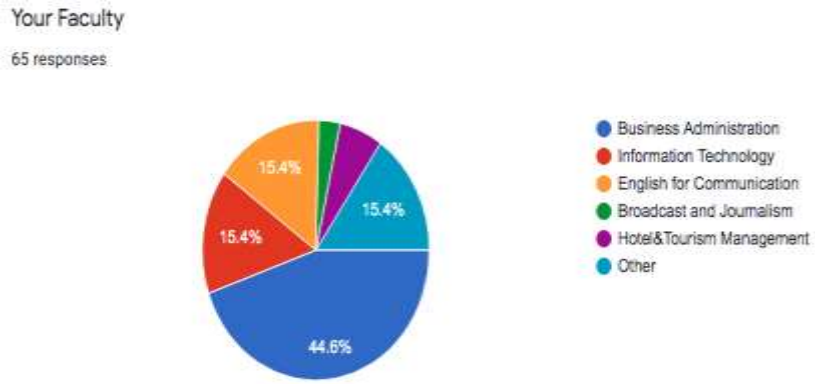


The majority of participants 41 (63.1%) were from Bachelor's program, followed by 17 (26.2%) and 7 (10.8%) were from high school and Master's program, respectively.



In the survey, 5 different faculties were given, however, the large number of students 29 (44.6%) were from Business Administration faculty, and there were 10 (15.4%) students from Information Technology, English for Communication and other faculties, separately. Continuously, other participants 4 (6.2%) were from Hotel & Tourism Management, and other participants 2 (3.1%) were from Broadcast and Journalism.



Most of the participants 21 (32.3%) were second-year students, and 20 (30.8%) were fourth-year students, and 12 (18.5%) were both first-year and third-year students. Among the participants, 54 (83.1%) were students, 8 (12.3%) were employed full time, 3 (4.6%) were part-time employed.

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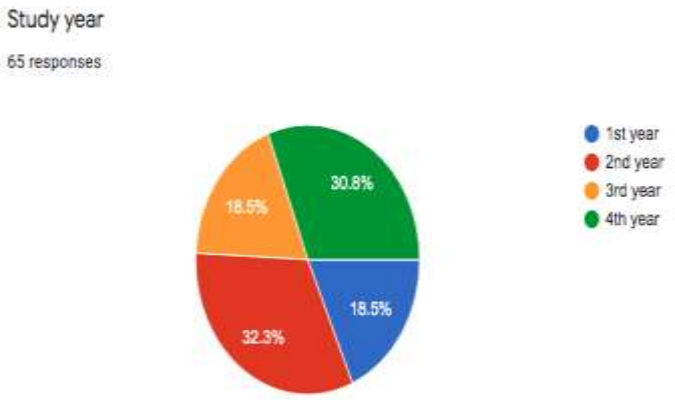
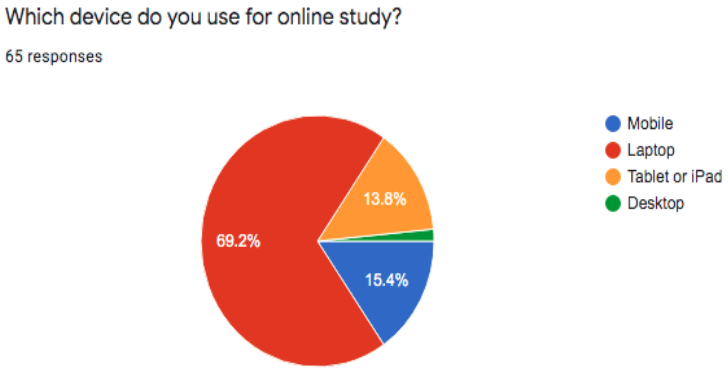


Most of the participants 29 (44.6%) studied 4, or more courses, followed by 17 (26.2%) studied only one course, 13 (20%) studied two courses, and 6 (9.2%) studied 3 courses online. The respondents preferred laptop device 51 (56.7%) the most, followed by mobile device 10 (15.4%), tablet or iPad device 9 (13.8%), and desktop device 1 (1.5%) for online study.



In the survey, 5 different platforms were given: Zoom Meetings platform 38 (58.5%), and other platforms 20 (30.8%), Google Meet 4 (6.2%), BigBlueButton 3 (4.6%) were preferred than Skype and BlueJeans. For Internet connection, Wi-Fi 47 (72.3%) and mobile data 18 (27.7%) was consumed by students for online study.

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Analysis of the survey

The survey results were summarized and calculated. Step by step were documented and all subfactors were properly measured.

Correlation Analysis

Bivariate correlation was calculated between perceived self-efficacy, perceived usefulness, perceived ease of use, learner interaction, student engagement, and student satisfaction. It was found that perceived self-efficacy was positively correlated with perceived usefulness (r = .272, p = .022) and perceived ease of use (r = .402, p = .001). Perceived ease of use and perceived usefulness was also positively correlated with student satisfaction (r = .584, p = .000), (r = .516, p = .000), respectively. It was also observed that learner interaction was positively correlated with student engagement (r = .693, p = .000), and simultaneously, student engagement was positively correlated with student satisfaction (r = .694, p = .000). It can be seen from the table below that all correlations were significant at the different levels (two-sided), except perceived self-efficacy wasn't significantly correlated with student satisfaction, but positive (r = 0.221, p = .064). Table 2 shows the correlation between all variables.

Table: 1 Pearson's Correlations of the variables

Correlations

		PEOU	PU	PSE	SE	LI	SS
PEOU	Pearson Correlation	1	.830**	.402**	.471**	.278*	.584**
	Sig. (2-tailed)		.000	.001	.000	.019	.000
	N	65	65	65	65	65	65
PU	Pearson Correlation	.830**	1	.272*	.525**	.352**	.516**
	Sig. (2-tailed)	.000		.022	.000	.003	.000
	N	65	65	65	65	65	65
PSE	Pearson Correlation	.402**	.272*	1	.172	.106	.221
	Sig. (2-tailed)	.001	.022		.151	.377	.064
	N	65	65	65	65	65	65
SE	Pearson Correlation	.471**	.525**	.172	1	.693**	.694**
	Sig. (2-tailed)	.000	.000	.151		.000	.000
	N	65	65	65	65	65	65
LI	Pearson Correlation	.278*	.352**	.106	.693**	1	.588**
	Sig. (2-tailed)	.019	.003	.377	.000		.000
	N	65	65	65	65	65	65
SS	Pearson Correlation	.584**	.516**	.221	.694**	.588**	1
	Sig. (2-tailed)	.000	.000	.064	.000	.000	
	N	65	65	65	65	65	65

Linear Regression analysis

The coefficient beta figure for each variable was derived after calculating perceived self-efficacy with perceived ease of use and perceived usefulness. Learner interaction was computed with student engagement, while perceived ease of use, perceived usefulness and student engagement was calculated with the satisfaction of the international students at public and private universities in Thailand. According to the results of the regression analysis, it was observed that perceived self-efficacy has a positive relationship with perceived ease of use and perceived usefulness with the R square of 0.061 (i.e., perceived self-efficacy explains

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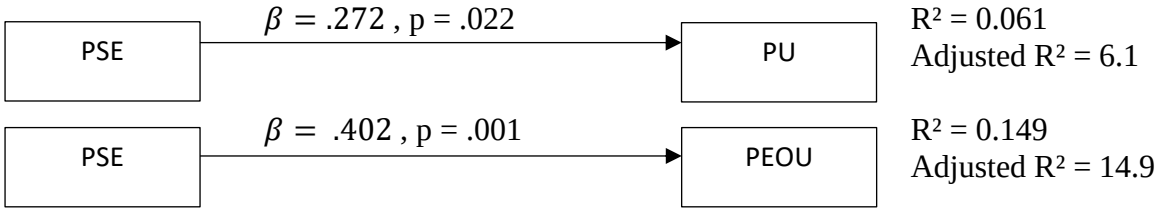
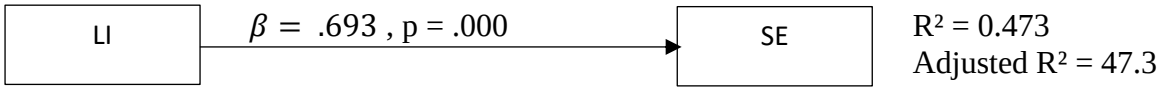
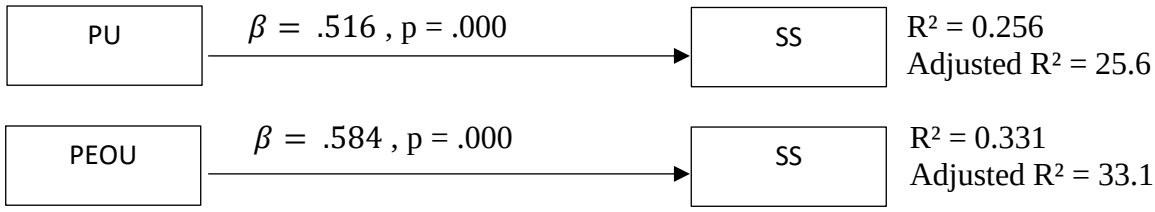
around 6.1% of perceived usefulness) and 0.149 (i.e., perceived self-efficacy explains around 15% of perceived ease of use) that supports H1 and H2 and both the hypotheses are significantly related.



The results showed that learner interaction and student engagement are positively related with the R square of 0.473 (it explains 47.3% between learner interaction and student engagement) and also significant that supports the H3.



On the other hand, perceived usefulness and perceived ease of use are positively related and the H4 and H5 are significantly related with student satisfaction with the R square of 0.256 (i.e., PEOU explains around 25.6% of student satisfaction) and 0.331 (i.e., around 33.1% can be explained between perceived usefulness and student satisfaction), separately.



From the result between student engagement and student satisfaction, a significantly positive relationship was noticed with the R square of 0.475 (it explains around 47.5 % between student engagement and satisfaction).

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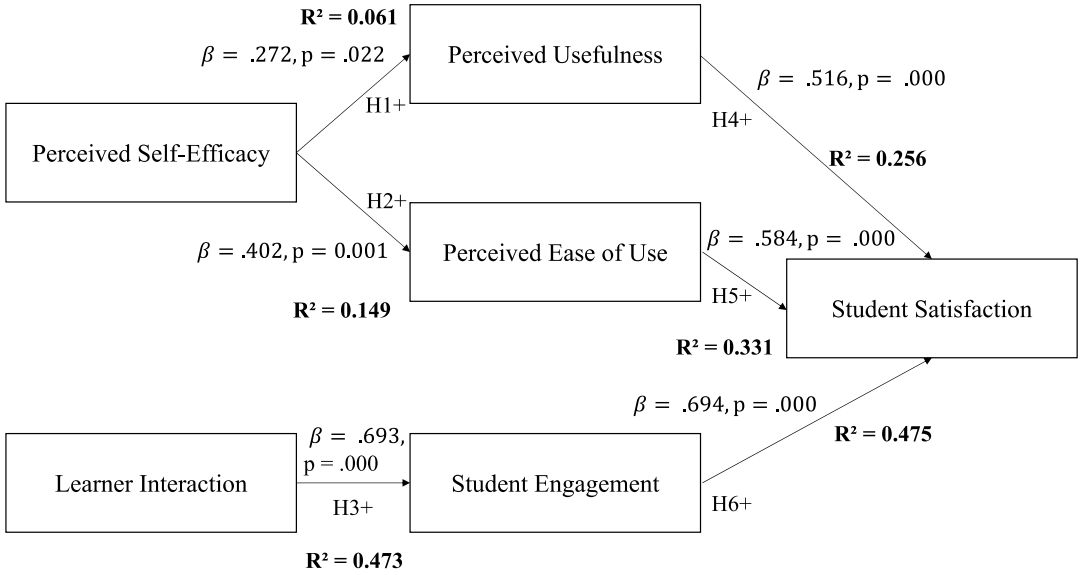

Figure 2: Model with Regression Analysis

Conclusions and Recommendations

Conclusion

In higher education institutions, understanding student satisfaction is critical, because it helps educational institutions to respond, adapt, and assist students in developing positive collaborative environments, as well as enhance service delivery and provide a better educational experience. Measuring student satisfaction can assist universities in determining which areas surpass standards and can be used to promote an institution (Global Student Satisfaction Awards, 2019). Therefore, this study was designed to investigate the factors that affect student satisfaction in online learning system in higher education. The independent variables were perceived self-efficacy, perceived usefulness, perceived ease of use, learner interaction, and student engagement and the dependent variable was student satisfaction.

In this research paper, all the relationships are positively correlated with significant regression coefficients. Likewise, the results of a previous study (Lee and Menglinger, 2011), the perceived self-efficacy had a positive and significant effect on both perceived usefulness and perceived ease of use. Whereas, in another study, student engagement did not mediate the relationship between learner interaction and student satisfaction, as the direct effects of learner interaction and student satisfaction were not statistically significant (Gray and DiLoreto, 2016).

Limitations of this Study

Some limitations should be pointed out. Firstly, the sample size was moderate. With a large number of samples from different nationalities, this study would give deeper meaning toward student satisfaction in online learning system. Secondly, this present research did not include cultural values, or cultural dimension to measure the dependent variable, thus, it is suggested

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that future research can examine cultural dimensions to understand the mindset of students for their satisfaction during their study year. Additionally, the comparison with local and international students' satisfaction would be useful to know more about online learning system.

Recommendations

The recommendations for the future include the broad data from other foreign colleges from universities of Thailand to be considered to provide the generalization for this community. To get more clear information about online learning system, some other variables including culture, content-area experience, instructional tasks, self-discipline from the online platform to recognize the international students' satisfaction. Moreover, including Thai students to data collection would be recommended to compare the satisfaction of all students and understanding the characteristics of the Thai universities can also be recommended for future research.

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